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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 09/837,105  
Filing Date: April 18, 2001  
Appellant(s): KIMURA, HAJIME

**MAILED**  
**AUG 17 2007**  
**GROUP 2800**

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Mark J. Murphy  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 11, 2007 appealing from the Office action  
mailed December 15, 2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

No amendment after final has been filed.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

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**(8) Evidence Relied Upon**

6,617,784	ABE	9-2003
5,206,746	OOI	4-1993
5,920,080	JONES	7-1999
6,147,451	SHIBATA	11-2000
6,777,871	DUGGAL	8-2004

Marked-up copy of figure 4A of the instant application.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 56, 59-62, 64, 80, 82-84, 86 and 88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US 6,617,784) in view of Ooi et al. (US 5,206,746).

Regarding to claim 56, Abe discloses in Figure 1, a light emitting display device comprising a substrate (1); a first electrode (2) formed over a first surface (12) of the substrate; an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer

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(4); and a light scattering body (plurality of prisms) formed over a second surface (11) of the substrate which is opposite to the first surface (12).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees.

Ooi teaches in Figures 1, 2 and 5-7, a lights-scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1), which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light Scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see column 4, line 68 to column 5, line 6).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the light scattering body of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 59, Abe discloses in Figure 1, the first electrode (2) comprises a transparent material (see column 4, lines 50-57), and the second electrode (6) comprises a light shielding material (see column 5, lines 28-33).

Regarding to claim 60, Abe discloses in Figure 1, the light-scattering body comprises a transparent material (see column 4, lines 9-16).

Regarding to claim 61, Abe discloses in Figure 1, the light-scattering body comprises one selected from the group consisting of polycarbonate, polyimide, BEB, indium oxide, and tin oxide (see column 4, lines 9-16).

Regarding to claim 62, Abe discloses in Figure 1, the thickness (H) of the light-scattering body (50-600 mm) is greater than or equal to a pitch (W1 of 10-400 mm) of the light-scattering body (see column 3, line 66 to column 4, line 8).

Regarding to claim 64, Abe teaches the light emitting device is incorporated into one of selected from the group consisting of an EL display, a video camera, and a computer. Further, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations (see MPEP 2114).

Regarding to claim 80, Abe discloses in Figure 1, a light emitted from the EL layer is extracted from a surface of the light scattering body.

Regarding to claim 82, Abe discloses in Figure 1, a light emitting display device comprising: a substrate (1) having a first surface and a second surface which is opposite to the first surface; a first electrode (2) formed over a first surface (12) of the substrate (1); an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer (4); and a

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light scattering body (plurality of prisms) formed over a second surface (11) of the substrate, wherein the first electrode (2) comprises a transparent material (see column 4, line 48 to column 5, line 15); and the second electrode (6) comprises a light shielding material (see column 5, lines 18-39).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees and wherein the light scattering body is trapezoid.

Ooi teaches in Figures 1, 2 and 5-7, Ooi teaches in Figures 1, 2 and 5-7, a light scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1), which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see Column 4, line 68 to column 5, line 6).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the light scattering body of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing

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angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 83, Abe discloses in Figure 1, a light emitted from the EL layer (4) is extracted from a surface of the light scattering body.

Regarding to claim 84, Ooi teaches in Figures 2, 5 and 7, the light scattering body is a trapezoid and the motivation to combine is the same as above.

Regarding to claim 86, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

Regarding to claim 88, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

Claims 57-58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US 6,617,784) in view of Ooi et al. (US 5,206,746) in further view of Jones (US 5,920,080).

Regarding to claim 57, Abe in view of Ooi discloses, a light emitting display device comprising a substrate; a first electrode formed over a first surface of the substrate; an EL

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layer formed on the first electrode; a second electrode formed on the EL layer; and a light scattering body having a first surface and a second surface formed on a second surface of the substrate, which is opposite to the first surface of the substrate, wherein the first surface of the light scattering body is in contact with the second surface of the substrate, wherein the second surface of the light scattering body is for scattering and extracting a light and wherein an angle between the first surface of the light scattering body and the second surface of the light scattering body is not less than 60 degrees and is less than 180 degrees.

However, Abe and Ooi do not disclose the first electrode is electrically connected to a thin film transistor.

The Jones reference teaches in Figure 2, a light emitting device comprising: a thin film transistor formed on the integrated circuit (120) electrically connected to the first electrode (200) via plug (140) for the purpose of providing an active matrix design that maximizes the peak luminance and reduce edge shorting of the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi and the thin film transistor of Jones for the electroluminescent device of Abe in order to provide an active matrix design that maximizes the peak luminance and reduces edge shorting of the light emitting device.

Regarding to claim 58, Jones teaches in Figure 3, the first electrode (200) is an anode and the second electrode (250) is a cathode, and the motivation to combine is the same as above.

Claims 63 is rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US 6,617,784) in view of Ooi et al. (US 5,206,746) in further view of Shibata et al. (US 6,147,451).



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Regarding to claim 63, Abe in view of Ooi discloses, a light emitting display device comprising a substrate; a first electrode formed over a first surface of the substrate; an EL layer formed on the first electrode; a second electrode formed on the EL layer; and a light scattering body having a first surface and a second surface formed on a second surface of the substrate, which is opposite to the first surface of the substrate, wherein the first surface of the light scattering body is in contact with the second surface of the substrate, wherein the second surface of the light scattering body is for scattering and extracting a light and wherein an angle between the first surface of the light scattering body and the second surface of the light scattering body is not less than 60 degrees and is less than 180 degrees.

However, Abe and Ooi does not disclose a pixel pitch is at least twice as long as a pitch of the light scattering body.

The Shibata reference teaches in Figures 2-5, a light emitting device comprising: a pixel pitch is at least twice as long as a pitch of the light scattering body for the purpose of providing clear and high luminescent device while improve the resolution of the light emitting device.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi for the electroluminescent device of Abe in the pixel array of Shibata in order to provide clear and high luminescent device while improve the resolution of the light-emitting device.

Claims 78-79, 81, 85, and 87 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe et al. (US 6,617,784) in view of Ooi et al. (US 5,206,746) in further view of Duggal et al. (US 6,777,871).

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Regarding to claim 78, Abe discloses in Figure 1, a self-light emitting display device comprising a substrate (1); a first electrode (2) formed over a first surface (12) of the substrate; an EL layer (4) formed on the first electrode (2); a second electrode (6) formed on the EL layer (4); and a light scattering body (plurality of prisms) formed over a second surface (11) of the substrate which is opposite to the first surface (12), wherein an angle between the light scattering body (plurality of prisms) and the second surface (11) is not less than 60 degrees and is less than 180 degrees (see column 3, lines 60-65).

However, Abe does not disclose an inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees and the light scattering body is made of a different material from the substrate.

Ooi teaches in Figures 1, 2 and 5-7, Ooi teaches in Figures 1, 2 and 5-7, a light scattering element (2) having a first surface (7) and a second surface (4A) formed on a second surface of the substrate (1), which is opposite to the first surface of the substrate (1), wherein the first surface (7) of the light scattering body is in contact with the second surface of the substrate (1), wherein the second surface (4A) of the light scattering body (2) is for scattering and extracting a light and wherein an inner angle between the first surface (7) of light scattering body (2) and the second surface (4A) of the light scattering body (2) is not less than 60 degrees and is less than 180 degrees (see column 6, lines 41 to column 7, line 6) for the purpose of obtaining a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio (see column 4, line 68 to column 5, line 6).

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However, Ooi does not disclose the light scattering body is made of a different material from the substrate.

The Duggal reference teaches in Figures 1-3, a light emitting device comprising: a light scattering body (3) is made of a different material from that of the substrate (see column 6, lines 14-30) for the purpose of improving the external quantum efficiency of the light emitting device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize the light scattering prism of Ooi with different material from that of the substrate of Duggal for the self-light emitting display device of Abe in order to obtain a transparent-scattering type optical device having a symmetric viewing angle with respect to the front face, capable of reducing the loss of the light volume of the illumination means disposed at the back side of the optical device, and providing a bright display and a high contrast ratio.

Regarding to claim 79, Abe discloses in Figure 1, wherein the first electrode (2) comprises a transparent material, and the second electrode comprises a light shielding material.

Regarding to claim 81, Abe discloses in Figure 1, a light emitted from the EL layer (4) is extracted from a surface of the light scattering body.

Regarding to claim 85, Ooi teaches in Figures 2, 5 and 7, the light scattering body is a trapezoid and the motivation to combine is the same as above.

Regarding to claim 87, Ooi teaches the use of TFT for each picture element to thereby form an assembly of dots so that various kinds of display are obtainable (see column 13, lines 23-28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilize a TFT to the first electrode in order to achieve the desired pattern.

**(10) Response to Argument**

Applicant's arguments beginning at page 11, in regards to the rejection of claims 56-64 and 78-88 under 103 U.S.C. 103(a) as being unpatentable over Abe et al. (US 6,617,784) in view of Ooi et al. (US 5,206,746) have been considered, but are not persuasive. Applicant contends that Ooi does not disclose the features of the inner angle between the light scattering body and the second surface is not less than 60 degrees and is less than 180 degrees and the light scattering body is a trapezoid.

The Examiner first points to figure 1 of Abe, which clearly shows a light-scattering body (item and top of item 1). The Examiner also notes that the light-scattering body as shown by Abe can be a single layer or a multilayer film comprising a prismatic film and the other layer which is in contact with the flat surface of the prismatic layer (column 4, lines 20-24). Hence, the substrate and prismatic film of Abe can both have first and second surfaces, even though they are not explicitly shown in a figure. With Ooi, the Examiner points to figure 1, which clearly shows a substrate (item 1) and a light-scattering body (item 2). The Examiner contends that Ooi is not being combined with Abe for absorbing light, but to merely show that it is known in the art that a substrate may be in contact with a prism, both having first and second surfaces, and have an inner angle between the light scattering body and the second surface in the range of not less than 60 degrees and less than 180 degrees. Regarding Ooi not extracting light, the Examiner notes that Ooi is not being used to show extraction or absorption of light. Abe clearly shows a light-scattering body that is used to extract light. Again, Ooi is merely used in combination with Abe to show inner angles and surfaces in contact with each other, not for extraction of absorption of light. Furthermore, Applicant contends, "Abe provides not discussion or suggestion of any

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angle between these two surfaces" (page 16 of brief). Again the Examiner points to column 4, lines 20-24 of Abe, which noticeably discloses that the prismatic film may be formed as two layers, not one. Since two layers would be present in Abe, an inner angle would obviously be present between the surfaces of the two layers. Hence, both Abe and Ooi show that inner angles are present and Ooi discloses the claimed range of the angle.

For the above stated reasons, it is considered that the Applicant has failed to provide evidence in the record to support his contention that the device as combined by Abe and Ooi is patentably distinct from the device as covered by claims 56-64 and 78-88 of the instant application.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Natalie K. Walford



8/9/07

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